1: DeLand O-4 (No date)1908 NQ17 Mandan NQ17

even the few surviving Mandans were driven from their own huts. Subsequently these tribes were again thus afflicted, and from one who was then stationed at Fort Clarke and an eye-witness of the fact, I am informed that suicide was committed by the victims throwing themselves over the bluffs of the river to the rocks below. De Smet states that both the smallpox and cholera created havoc among the northern Indians in 1851." (p. 227.)

The making of glass beads by the Mandans and Aricarees is alluded to by Wheeler, who says:

Glass Beads, Etc. "The Lewis and Clarke narrative for March 16th describes a process for making glass beads known to the Mandans.

"The Indians did not make the glass itself. This they obtained from the whites, but there is evidence that, prior to the appearance of the traders, they used obsidian, or natural glass, for this purpose. Dr. Matthews, as late as 1870, had flat triangular blue glass pendants made to order by an Aricaree woman, he furnishing the glass.

"These people also made unglazed pottery, mats, and baskets, ladles and spoons, from the horns of the Rocky mountain sheep (Ovius Montana) and the buffalo, and from the shoulder-blades of the bison they fashioned the hoes with which they hoed the ground in very early time. Since the whites came, the crude implements of the old days have been mostly supplanted by our household, garden, etc., utensils; but, in 1902, I purchased a fine sheep-horn ladle apparently in daily use still." (p. 228.)

Steinbreuck's Observations. Hon. E. R. Steinbreuck, field officer of the State Historical Society of North Dakota, makes the further statement to the writer, in a letter dated May 24th, 1908, concerning the Mandan deserted villages, and their former habitat, as follows:

Unsolved Problems. "I think it is a difficult and as yet unsolved problem, to write the history of the Mandans, as aborigines of South Dakota. We have the end of the trail, not so the beginning. We don't know for certain where the Mandans came from. The end is in North Dakota and that is also the beginning of the traditions of the present Mandans. Their entire knowledge of their origin is limited to the Heart river region in North Da-

3: Will and Spinden E-5 (1905) 1906
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hung down to the shoulders. It was covered with quill work in different colors. On its top was placed horizontally an eagle feather the base of which was covered with red cloth. The usual Siouan head-dresses were also worn. In every day life, however, Maximilian says the hair was knotted up in a tuft. The Mandan men tattooed, but never on more than one half of the body. Usually the right breast and upper arm was tattooed with black parallel lines, accompanied by a few other figures. Occasionally the fore-arm and some of the fingers were tattooed. Occasionally also the women tattooed, but to only a small extent. Ermine was used in nearly all of their finest dresses, and tails of other animals as well as different sorts of bird feathers had especial signification in ceremonial or war costumes. Altogether, as Catlin says, the dress of the Blackfeet, Sioux, and Mandans was practically alike. The great noticeable difference seems to be that the Mandans had much less regard for clothing than did most of their neighbors, they had a tendency toward simple apparel, and the buffalo robe was their original and only absolutely necessary garment.

WEAPONS:— The arms of the Mandans as well as their other culture features were much like those of their neighbors. They used the customary things — bows and arrows, lances, shields, knives, and tomahawks, and had in addition a peculiar weapon of their own called a bow-lance. The knives and arrow points were at first of stone as were the axes and tomahawks, but stone implements soon fell into disuse when steel ones were obtained. The Mandan bows were usually of elm or ash wood, and rather short, with cords of twisted sinews. Occasionally, however, a bow of bone or horn was seen. Catlin describes such a one. It was short and had a sinew backing, while the cord was made of three twisted sinews. With the bow was usually a quiver of mountain lion, wild-cat, or wolf skin, the whole hide being used. The arrows of the Mandans were much better made than those of their neighbors. They were feathered with hawk and eagle feathers which were attached in a short spiral, a red line wound round the arrow in a spiral from barb to base. There were hunting points and war points: the for-

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Verendrye mentions their skill in making such things as painted ox-robes, deer skin, dressed buckskin, and ornamented fur and feathers, painted feathers, peltry, wrought garters, circlets for the head, and girdles. They certainly understood the art of dressing skins, though perhaps other nations equalled them. All their visitors speak of the ornamented robes for the decoration of which porcupine quills dyed various colors, or the pigments themselves, as paints, were used at first, though beads came gradually to take their places. The ornamentation consisted usually of representations of animals, and pictographic records. When leather got wet, it was beaten and rubbed with white clay which they always carried with them. This kept the robes soft. Then there were medicine bags, tobacco pouches, sheathes for knives and bows, all of skin, painted or embroidered with quills, such as are seen over the whole plains area. They had leather bridles for their horses, sometimes embroidered, and used a saddle, similar to that of the Dakotas. The horses were caught by means of long raw hide lariats which the Indians made themselves.

Whistles were also necessary articles to those belonging to the societies. Maximilian[1] describes them as "long wooden whistles at whose lower end an eagle feather on a string dangles." He says they also had large flute whistles, twenty inches long, with holes to vary the notes by application of the fingers. Besides these were the war whistles, usually made from the wing bone of some large bird. Other articles of bone, necessitated by the great use of skins, were the bone scrapers, needles and awls with which each house was profusely supplied.

Almost the only agricultural implements which they used were hoes. These were the shoulder blades of buffalo or occasionally of elk, which were cut down and to which a crooked stick was fastened as a handle.[2]

Among their cooking utensils, which were used in every hut, were spoons and ladles of bighorn and buffalo horns. Verendrye says some of these ladles held as much as three pints.

So far as the accounts go the Mandans did not make any textile fabric, though the Arikara are known to have made

[1] Op. cit., p. 416.

[2] Henry: vol. I, p. 343.

garters and belts of buffalo hair.

3:Will and Spinden E-5 (1905) 1906
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Potter's clay was commonly met with in small quantities. It was almost black, and very fine grained. Sometimes the clay was found pure, and sometimes it had already been mixed with coarse sand, made by burning and pulverizing granite.

SHELL:—The shell remains in this village site were scanty. No layers or heaps of shells were found in any of the excavations, and none were in evidence in the dump. Thus it is to be presumed that shell-fish were comparatively little used for food. A

FIG. 5. SHELL OBJECTS. ½

few snail shells were found in the mounds, and a few shells of the fresh water mussel, or Unio, were found scattered widely among the refuse in the mounds, caches and house rings. Some of the latter were also found in a house ring at the Ward site.

The Unio shells furnished easily worked material for useful and ornamental objects, and it is somewhat strange that more of these were not found. Fig. 5, *a*, shows an implement made by pointing one end of a unio shell. An implement very similar to this is said[1] to have been used in smoothing and shaping pottery.

[1] Notes on Canadian Pottery by F. W. Waugh: 13th Archaeological Report of the Minister of Education, Ontario.

3: Will and Spinden E-5 (1905) 1906
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In excavating the house site, Work 9, a disc-shaped shell gorget (Fig. 5, *c*), perforated in the center and incised around the rim with radiating lines, was found. A smaller piece of unio shell (Fig. 5, *e*), cut in the shape of a rectangle and polished, may have been used as an ornament. Only two shell beads were found. One was made from a Unio shell and was disc-shaped and about half an inch in diameter (Fig. *b*). The second was a pierced shell of the Oliva literata (Fig. *d*), This latter shell is an Atlantic seaboard variety, found south of Cape Hatteras. It was probably brought up the Mississippi in the course of trade, being commonly found in the mounds of the Ohio and Mississippi valleys.

COPPER:—Only two pieces of copper were found, one a bead about a half inch in length, and the other an irregular piece of sheet copper with a surface of less than a square inch.

BONE:—Bone implements were found in quantity, distributed through all the remains that were examined. The bone articles found may be grouped under two heads, utilitarian and ornamental. The first comprises hoes, edged implements, grainers, arrow-straighteners, scrapers, digging sticks, awls, needles and fish-hooks, besides other articles of uncertain use. The second group contains gorgets, beads, buckles, bracelets, and certain finely made bone objects, which may have had a ceremonial use.

Hoes, broken and entire, were often met with. For these the shoulder blade of the buffalo and elk was used, the spine being cut away and the lower edge of the blade trimmed. The socket end of the blade shows no signs of wear in any of the specimens. This may be because it was protected by the thongs which bound it to the handle.

Smaller implements, made from part of a buffalo horn, were found here and there. Most of these were polished by much use, the base of the horn being worn down to a cutting edge. Fig. 6 represents one which has acquired a high polish from use. One of these implements was found in the middle stage of manufacture; in it the horn is roughly trimmed, as with

3: Will and Spinden E-5 (1905) 1906
NQ17 Mandan NQ17

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an axe, and part of the frontal bone of the skull is still attached to the base of the horn. These horn tools may have been used for scrapers, trowels, or for general purposes in the kitchen.

FIG. 6. IMPLEMENT OF BUFFALO HORN. ½

Several gouges or grainers were uncovered. They were made from the metapodial bones of the buffalo, and show good

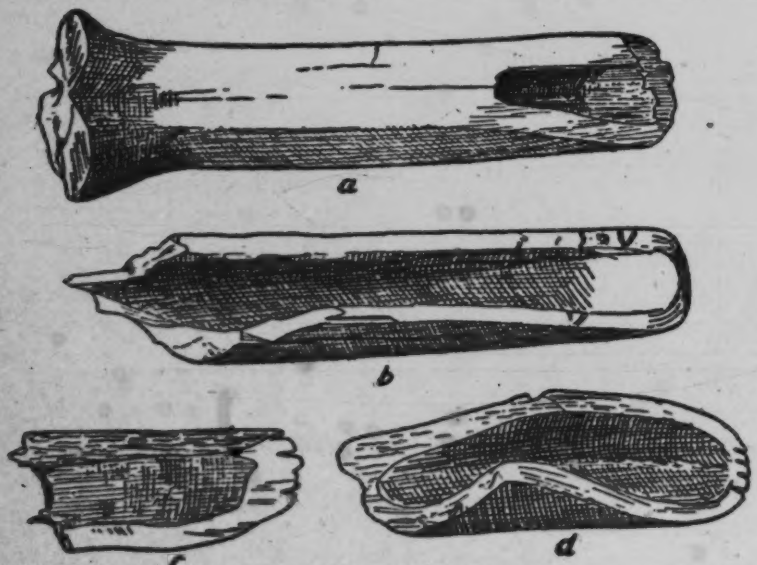

FIG. 7. GOUGES OR GRAINERS. ½

workmanship. Some of them (Fig. 7, *a* and *b*) have a smooth scraping edge, while others (Fig. 7, *c* and *d*) have a notched edge.

3: Will and Spinden E-5 (1905) 1906
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The socket end of Fig. 7, *a*, the only perfect specimen, was probably covered with a pad, as the bone is rough, untrimmed, and shows no signs of wear. These gouge-like tools were probably used to scrape down skins in the process of graining.

So-called "arrow-straighteners" were found in considerable numbers in the mounds. These are of buffalo rib bones through which from one to three holes have been bored. The holes are sometimes almost round, but, more usually, are elongated along the axis of the bone. The bore is doubly funnel-shaped expanding toward both surfaces of the bone (Fig. 8). The use of these objects is problematical. It seems illogical to consider them

FIG. 8. ARROW-STRAIGHTENERS. ¼

wrenches to straighten arrowshafts, because in this operation only one hole could be used at a time, and additional holes would only weaken the instrument. Since the holes in each piece are all the same size, they could not have been intended for arrowshafts of different sizes. However, beyond the possible use as arrow-straighteners, no use has been suggested for them.

Certain crude bone tools, worn on one or more edges, may be grouped as scrapers. Most of these are made of broken bones of the buffalo, in particular the shoulder blades and the larger leg bones. They evidently had only a temporary use.

"Digging sticks," as they have been called for want of a better name, were found in great numbers. These are made of the rib bones of the buffalo and elk, which have been worn off round at one or both ends (Plate XXXV, fig. *a*).

By far the most common of worked bone objects found, fall under the head of awls. These were found in all the exca-

3: Will and Spinden E-5 (1905) 1906
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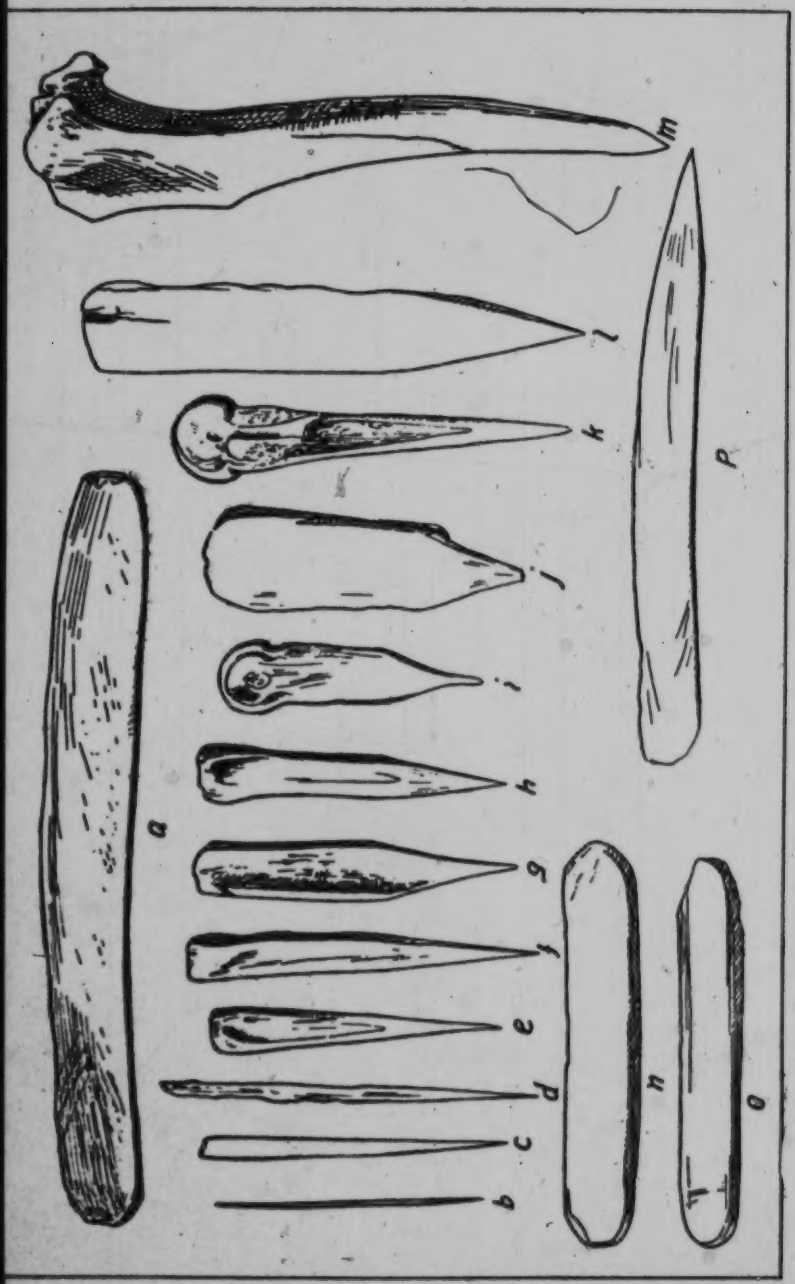

SMALL BONE IMPLEMENTS. ½

[Facing p. 170]

3:Will and Spinden E-5 (1905) 1906
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X172 vations and in all the village sites visited. They have a wide range in size and shape; a series of typical examples is given in ● 321 Plate XXXV. The needles are represented in this plate by Figs. *b*, *c*, 412 and *d*. The first of these is round and very sharp, the other two are flat pieces of slivered bird bone. The larger awls are made in various shapes from various bones. Figs. *e*, *f*, and *h* are of bird bones. Figs. *g*, *j*, *l*, *n*, *o* and *p* are made from rib bones of buffalo and deer. Figs. *i* and *k* are made from the metapodial bones of the deer. Besides the awls which are more or less regular in shape, many were found which were very irregular. These were evidently intended for a temporary use and were made of anything that came to hand. Fig. *m* represents one of these cruder implements. The awls were ground to a point on whet stones of pumice stone.

A paint brush similar to those used of late years was found. It is triangular in shape and is made from the interior portion of a large bone.

FIG. 9. OBJECT MADE FROM BUFFALO SHOULDER BLADE. ½

Certain objects of doubtful use are made of the shoulder blades of large animals. Fig. 9 shows such an implement. It is thin, highly polished and has one edge sharpened. They may have been used for knives and scrapers.

3: Will and Spinden E-5 (1905) 1906
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Plate XXXVI, figs. *s* and *t*, shows two bone fish-hooks which were unearthed. Figs. *u* and *v*, on the same plate, figure two pieces of worked bone which may be fish-hooks in the process of manufacture.

Bone was made into a great number of ornamental objects. Of these, beads were the more numerous in the remains. Bone beads were usually made from the leg and wing bones of birds. Plate XXXVI, figs. *l* to *o*, are bones from which beads have been wholly or partially cut off. Plate XXXVI, figs. *a* to *k*, are beads of different sizes, ranging from an inch and a half to a quarter of an inch in length, and of varying diameters.

"Bracelets" made from the rib bones of small animals are shown in Plate XXXVI, figs. *w* to *z*. These are usually grooved on one side and rounded on the other, and perforated at one end. While calling these bracelets it is difficult to understand just how they were used as such and they may have been simply pendants.

Plate XXXVI, fig. *r*, represents a bone object, with notches on the four sides much like the rectangular stones previously described. This object is flat on one side and curved on the other and has a high polish.

Plate XXXVI, figs. *p* and *q*, are fragments of buffalo shoulder blades which have perforations, their use being uncertain.

FIG. 10. A BONE BUCKLE. ½

Fig. 10 shows a curious piece of bone which probably served as a buckle. It is made of the outside portion of a buffalo rib.

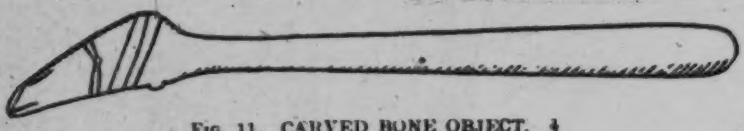

FIG. 11. CARVED BONE OBJECT. ½

The only piece of realistic art found is shown in Fig. 11. This bone is beautifully carved and polished. One end is incised to represent a crane's head, while the rest is rounded off to

3: Will and Spinden E-5 (1905) 1906
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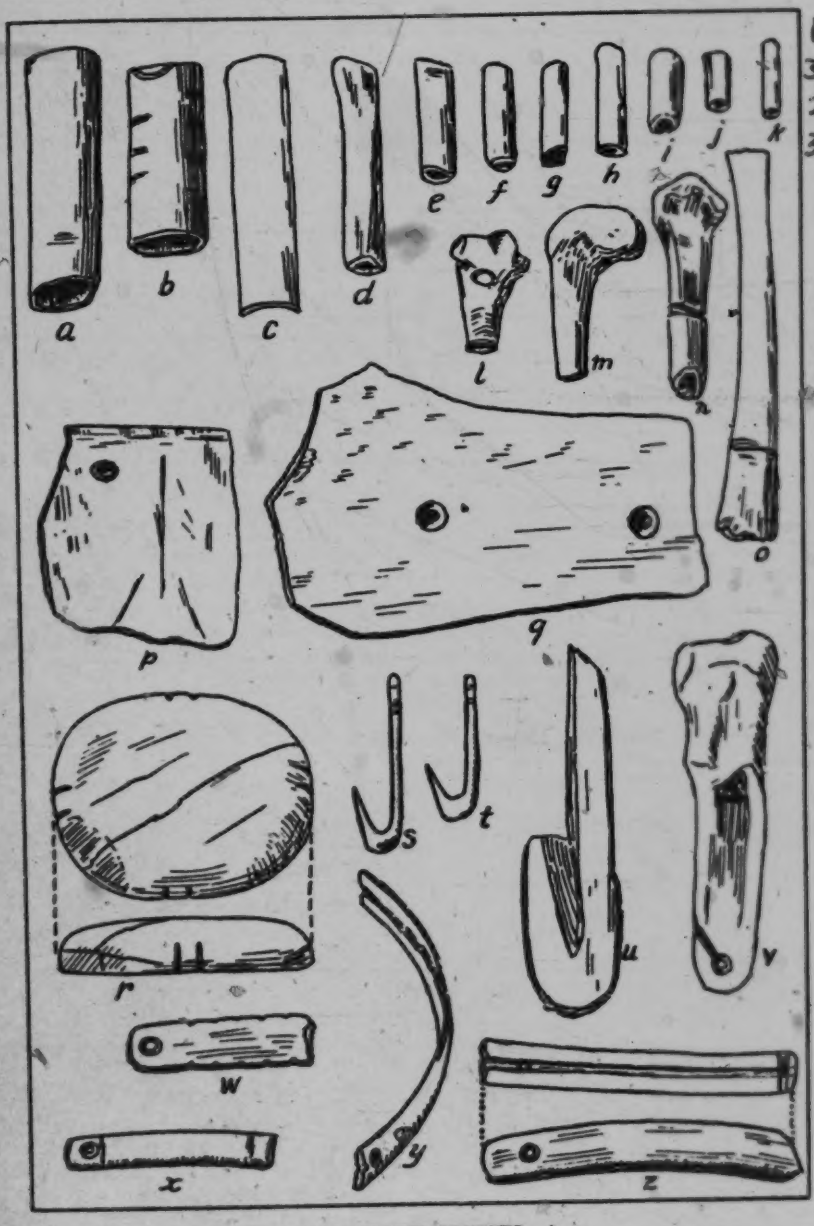

SMALL BONE OBJECTS. ½

[Facing p. 172]

3: Will and Spinden E-5 (1905) 1906
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X 172 form the handle. The only sign of wear is on the beak of the bird's head. The use of this object is uncertain, but it is possible that it was part of the paraphernalia of a medicine man. ●321

FIG. 12. BONE OBJECT WITH INCISED DECORATION. ½

Fig. 12 represents a portion of a well-made bone instrument which may have had a use similar to the above. This object is decorated with incised markings.

Several pieces of carved bones, representing various animal and bird heads, are reported to have been found in the various village sites, but no opportunity was given to inspect them.

X 172 323 171 POTTERY:—The pottery of the Mandans, judging by the fragments found at the different village sites, is one of the most interesting features of their culture. It is an excellent ware, thin, well-made, and with a characteristic development of form and ornament. The excellence of the pottery is the more remarkable when it is called to mind that the Mandans were at the northwestern limits of the pottery area. North of them, indeed, on the Mouse River, some crude pottery of uncertain origin is found. South of them, the Arikara and Omaha practised the ceramic art, being influenced in it by the pottery makers of the Mississippi valley. East of them, for several hundred miles, lived nomadic tribes who were apparently unacquainted with pottery, while the pottery of Wisconsin was too remote to exert an influence.

X 172 323 Mandan pottery is mentioned by almost all the early explorers, but no one gives an extended description of it, or a sufficiently detailed account of the method of manufacture. None of this pottery has been made for many years by the survivors of the tribe, but a knowledge of it can be gathered from a study of the fragments which have been preserved.

The pottery is, for the most part, a black ware, although sometimes it turned dull orange or red from firing. The un-